

MECHANIC STUDY GUIDE

Engine Tuneup/Performance

Automobile & Light Truck Repair

Listed below are a number of items and subjects which make up the mechanic certification test identified above. An individual's ability to pass the certification test will depend upon the amount of knowledge the person has concerning these items. **NOTE:** There could be up to 5 additional pre-test questions. These questions will not count but may be used on a later version of the test. Your answers to these pre-test questions will not affect your score. Since you won't know which they are, you should answer all questions.

Computer Control & Sensor Basics - 24%

- ROM (Read Only Memory)
- Fault codes
- Maintaining stoichiometric balance
- Closed loop
- Oxygen sensor diagnosis
- Knock sensor function
- Self diagnosis
- Hall sensor pattern reading
- Types of meters to use
- Scan tool usage
- TPS operation

Ignition Systems - 13%

- Scope pattern diagnosis
- Setting timing
- No spark diagnosis
- Spark plug voltage requirements

Carburetor & Fuel Injection - 10%

- Injector pulse width
- Fuel line replacement
- E.F.I. principals
- "Heavy float" symptoms
- Types of injection systems

Performance Basics - 10%

- Causes of detonation
- Spark plug diagnosis
- Dirty air cleaner symptoms
- Causes of a lean mixture
- Influences on performance

Diagnosis (starting system & miscellaneous) - 18%

- Engine timing
- Slow cranking diagnosis
- Circuit resistance checks
- Engine vacuum
- Catalytic converter
- Cylinder leakage
- Compression test

Emission Control Systems - 25%

- EGR operation
- Evaporative emission control system
- Hydrocarbon levels
- Oxides of nitrogen
- O₂ sensor operation
- Fuel vapor recovery system
- Carbon monoxide levels
- Exhaust analyzer readings
- Engine timing & effect on emissions
- Catalytic converter's purpose

SAMPLE QUESTION:

In automotive computers, this memory contains information that tailors the computer to the vehicle.

- A. Programmable Read Only Memory (PROM).
- B. Controllable Access Memory (CAM).
- C. Random Access Memory (RAM).
- D. None of the above.

ANSWER: A